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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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09/994,744

11/28/2001

Ryo Yamasaki

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06/13/2008

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EXAMINER

AGGARWAL, YOGESH K

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

06/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 09/994,744 | Applicant(s) YAMASAKI, RYO | |
| | Examiner YOGESH K. AGGARWAL | Art Unit 2622 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 2,3 and 5-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/25/2008 has been entered.

Response to Arguments

2. Applicant's arguments filed 03/25/2008 have been fully considered but they are not persuasive.

Examiner's response:

Applicant argues with regards to claim 1 that Ota fails to teach that two photoelectric portions are formed in each pixel based on the first and second sensitive areas. The Examiner respectfully disagrees. Ota teaches light receiving element 382 has three light-receiving surfaces 382a -382c and similarly pixel 388 has three light-receiving units 388a-388c corresponding to first and second sensitive areas of each pixel, col. 27 lines 61-62 and col. 28 lines 26-27, figure 17.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2622

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ota et al. (US Patent # 5,689,339).

[Claim 1]

An image pickup apparatus comprising (figure 17) a plurality of pixels (382 and 388) each including a first sensitive area (e.g. 388 has a first sensitive area 388a) corresponding to a first light flux of light fluxes (light flux passing through lens 384) respectively from different areas dividing an exit pupil area of an imaging optical system (lens 384 exit pupil has three different light fluxes that pass through to the light receiving elements 388a, 388b and 388c) and a second sensitive area (e.g. 388b) corresponding to a second light flux of the light fluxes (passes through a different light area of the lens 384), so that two photoelectric portions are formed in each pixel based on the first and second sensitive areas (light receiving element 382 has three light-receiving surfaces 382a -382c and similarly pixel 388 has three light-receiving units 388a-388c corresponding to first and second sensitive areas of each pixel, col. 27 lines 61-62 and col. 28 lines 26-27, figure 17) and an output unit (signal processing system 214) which outputs a first electric signal and a second electric signal to detect a phase difference between the first electric signal and the second electric signal, from said plurality of pixels (col. 30 lines 19-29), wherein the first sensitive area and the second sensitive area are arranged so that each of the first electric signal and the second electric signal, output by said output unit, includes signals generated in the first sensitive area and the second sensitive area (the output signals from 388a and 388b are added to detect a phase difference, so that first and second signals include signals from both 388a and 388b. Even in applicant's specification in paragraph 110, In the image pickup mode, the light components from the entire exit pupil of the image pickup optical system can be

photoelectrically converted by adding the output signals from the first and second photoelectric conversion units, thereby realizing both image pickup and focus detection using the phase difference scheme by the solid-state image pickup element 100).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. (US Patent # 5,689,339) in view of Tsunekawa et al. (US Patent # 4,652,109).

[Claim 4]

Suda fails to teach wherein the first and second sensitive areas are formed on the basis of an F-number of the imaging optical system in detection of focus. However Tsunekawa teaches a light sensor SP (figures 1-3) having overlapping light sensing areas BM1 and BN1 (first and second sensitive areas wherein central region is BM1 and entire area of the frame is BN1, figure 2) are formed such that the sensitivity (shown as output of light sensor on vertical axis, e.g. AM1 is the light output corresponding to the region BM1) for different areas varies according to the f-number of objective lens in detection of focus (col. 2 line 54-col. 3 line 2, figure 3).

Therefore taking the combined teachings of Suda and Tsunekawa, it would have been obvious to one skilled in the art at the time of the invention to have been motivated to have the first and second sensitive areas are formed on the basis of an F-number of the imaging optical

system of a focus detection mode in order to obtain a aperture correction factor that is used to calculate a highly accurate exposure value.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOGESH K. AGGARWAL whose telephone number is (571)272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571)-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yogesh K Aggarwal/
Primary Examiner, Art Unit 2622